We Claim:

1. A particulate cathodic material for use in a rechargeable lithium electrochemical cell wherein each particle comprises:

a lithiated transition metal oxide core functional as an intercalation cathode: and

a lithium ion conductor in contact with said core, said conductor having electron conductive properties and being functional to stabilize said core to thereby impart predetermined electrochemical properties to said cathodic materjal.

2. The cathodic material as set forth in claim 1 wherein the transition metal of said lithiated transition metal oxide core is one or more metals selected from the group consisting of Groups IIIb, IVB, VB, VIB, VIIB, and VIII of the Periodic Table.

3. The cathodic material as set forth in claim 1 wherein said core material transition metal is selected from the group consisting of nickel, manganese, cobalt, chromium, vanadium, titanium and iron, and mixtures thereof.

4. The cathodic material as set forth in claim 1 wherein said core material comprises lithium nickel dioxide or lithium nickel cobalt dioxide having the formula $LiNi_{1-y}Co_yO_2$ wherein $y>0$, or a mixture thereof.

5. The cathode material as set forth in claim 1 wherein said lithium ion conductor is a lithiated metal oxide or lithiated mixed metal oxide wherein said metal is selected from the

group consisting of Groups IIIb, IVB, VB, VIB, VIIB, and VIII of the Periodic Table, aluminium and boron.

6. The cathodic material as set forth in claim 1 wherein said lithium ion conductor is a lithium metal oxide or lithium mixed metal oxide and wherein the transition metal is selected from the group consisting of cobalt, nickel, manganese, chromium, vanadium, titanium, iron, aluminium and boron, and mixtures thereof.

7. The cathodic material as set forth in claim 1 wherein said lithium ion conductor is selected from the group consisting of lithium cobalt dioxide ($LiCoO_2$), lithium cobalt nickel oxide ($LiCo_xNi_{1-x}O_2$), lithium aluminum dioxide ($LiAlO_2$) and lithium aluminium nickel oxide ($LiAl_xNi_{1-x}O_2$), and mixtures thereof.

8. The cathodic material as set forth in claim 2 wherein said lithium ion conductor is selected from the group consisting of lithium cobalt dioxide ($LiCoO_2$), lithium cobalt nickel oxide ($LiCo_xNi_{1-x}O_2$), lithium aluminum dioxide ($LiAlO_2$) and lithium aluminium nickel oxide ($LiAl_xNi_{1-x}O_2$), and mixtures thereof.

9. The cathodic material as set forth in claim 3 wherein said lithium ion conductor is selected from the group consisting of lithium cobalt dioxide ($LiCoO_2$), lithium cobalt nickel oxide ($LiCo_xNi_{1-x}O_2$), lithium aluminum dioxide ($LiAlO_2$) and lithium aluminium nickel oxide ($LiAl_xNi_{1-x}O_2$), and mixtures thereof.

10. The cathodic material as set forth in claim 4 wherein said lithium ion conductor is selected from the group consisting of lithium cobalt dioxide ($LiCoO_2$), lithium cobalt

nickel oxide ($LiCo_xNi_{1-x}O_2$), lithium aluminum dioxide ($LiAlO_2$) and lithium aluminium nickel oxide ($LiAl_xNi_{1-x}O_2$), and mixtures thereof, and wherein x>y.

11. The cathodic material as set forth in claim 4 wherein said lithium ion conductor is $LiCo_xNi_{1-x}O_2$ having a thickness between about 0.5nm and about 5000 nm, and wherein x>y+0.1 for y<0.9, and x>0.1 for lithium nickel dioxide as a core.

12. The cathodic material as set forth in claim 4 wherein said lithium ion conductor is $LiCo_xNi_{1-x}O_2$, having a thickness between about 1 nm and about 500 nm, and x>y+0.1 for y<0.9, and x>0.1 for lithium nickel dioxide as a core.

13. A particulate electrode material for use in a rechargeable alkali metal electrochemical cell wherein each particle comprises:

an alkali metal-transition metal oxide core functional as an intercalation electrode: and

an alkali metal ion conductor in contact with said core, said conductor having electron conductive properties and being functional to stabilize said core to thereby impart predetermined electrochemical properties to said electrode material.

14. The electrode material as set forth in claim 13 wherein the transition metal of said alkali transition metal oxide core is one or more metals selected from the group consisting of the metals of Groups IIIb, IVB, VB, VIB, VIIB, and VIII of the Periodic Table.

15. The electrode material as set forth in claim 13 wherein said core material transition metal is selected from the group consisting of nickel, manganese, cobalt, chromium, vanadium, titanium and iron, and mixtures thereof.

16. The electrode material as set forth in claim 13 wherein said core material comprises an alkali metal nickel dioxide, an alkali metal nickel cobalt dioxide having the formula $MNi_{1-x}Co_xO_2$ wherein $x>0$, and M is an alkali metal, or a mixture thereof.

17. The electrode material as set forth in claim 13 wherein said alkali metal ion conductor is an alkali metal- metal oxide or an alkali metal mixed metal oxide wherein said metal is selected from the group consisting of Groups IIIb, IVB, VB, VIB, VIIB, and VIII of the Periodic Table, aluminium and boron.

18. The electrode material as set forth in claim 13 wherein said alkali metal ion conductor is an alkali metal- metal or mixed metal oxide selected from the group consisting of an alkali metal cobalt, nickel, manganese, chromium, aluminium and boron oxide, and a mixture thereof.

19. The electrode material as set forth in claim 13 wherein said alkali metal ion conductor is selected from the group consisting of an alkali metal cobalt dioxide ($MCoO_2$), an alkali metal cobalt nickel oxide ($MCo_xNi_{1-x}O_2$), an alkali metal aluminum dioxide ($MAlO_2$) and an alkali metal aluminium nickel oxide ($MAl_xNi_{1-x}O_2$), and mixtures thereof.

20. The electrode material as set forth in claim 14 wherein said alkali metal ion conductor is selected from the group consisting of an alkali metal cobalt dioxide ($MCoO_2$), an alkali metal cobalt nickel oxide ($MCo_xNi_{1-x}O_2$), an alkali metal aluminum dioxide ($MAlO_2$) and an alkali metal aluminium nickel oxide ($MiAl_xNi_{1-x}O_2$), and mixtures thereof.

21. The electrode material as set forth in claim 15 wherein said alkali metal ion conductor is selected from the group consisting of an alkali metal cobalt dioxide ($MCoO_2$), an alkali metal cobalt nickel oxide ($MCo_xNi_{1-x}O_2$), an alkali metal aluminum dioxide ($MAlO_2$) and an alkali metal aluminium nickel oxide ($MiAl_xNi_{1-x}O_2$), and mixtures thereof.

22. The electrode material as set forth in claim 16 wherein said alkali metal ion conductor is selected from the group consisting of an alkali metal cobalt dioxide ($MCoO_2$), an alkali metal cobalt nickel oxide ($MCo_xNi_{1-x}O_2$), an alkali metal aluminum dioxide ($MAlO_2$) and an alkali metal aluminium nickel oxide ($MiAl_xNi_{1-x}O_2$), and mixtures thereof.

23. A process for the preparation of a stabilized, particulate cathodic material for use in a rechargeable lithium electrochemical cell wherein each particle comprises a lithiated transition metal oxide core functional as an intercalation cathode and a lithium ion conductor in contact with said core, said conductor having electron conductive properties and being functional to stabilize said core to

thereby impart predetermined electrochemical properties to said cathodic material, which comprises:

providing a core material selected from the group consisting of $LiNiO_2$ and $LiNi_{1-y}Co_yO_2$ wherein $y>0$;

admixing an aqueous solution containing a metal compound selected from the group consisting of cobalt nitrate, nickel nitrate, aluminium nitrate and mixtures thereof with said core material; and

heating the reactants at a temperature effective to form the lithium ion conductor on said core and thereby produce said stabilized cathodic material.

24. A process as claimed in claim 23 wherein the reactants are heated at a temperature of between about 300 to 1000°C.

25. A process as claimed in claim 23 wherein the reactants are heated at a temperature of between about 600 to 900°C.

26. The process as set forth in claim 23 further comprising admixing lithium nitrate to said aqueous solution.

27. A process for the preparation of a stabilized, particulate cathodic material for use in a rechargeable lithium electrochemical cell wherein each particle comprises a lithiated transition metal oxide core functional as an intercalation cathode and a lithium ion conductor in contact with said core, said conductor having electron conductive properties and being functional to stabilize said core to thereby impart predetermined electrochemical properties to said cathodic material which comprises:

providing a core material selected from the group consisting of $LiNiO_2$ and $LiNi_{1-y}Co_yO_2$ wherein $y>0$, and mixtures thereof;

coating said core with a slurry of a metal compound selected from the group consisting of cobalt oxide and cobalt hydroxide; and

heating the coated core at a temperature effective to form the lithium ion conductor on said core and thereby produce said stabilized cathodic material.

28. A process as claimed in claim 27 wherein the reactants are heated at a temperature of between about 300 to 1000°C.

29. A process as claimed in claim 27 wherein the reactants are heated at a temperature of between about 600 to 900°C.

30. A process as claimed in claim 29 further comprising admixing with said metal compound an aqueous lithium-containing solution decomposable under reaction conditions to form a lithium oxide.

31. A particulate cathodic material ~~for use~~ in a rechargeable lithium electrochemical cell produced by the ~~process of claim 10.~~